

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A system accessing and transmitting different data frames in a digital transmission network for accessing and transmitting different data frames, comprising:

at least ~~[[a]]~~ one subscriber network interface, which is used to couple with ~~[[the]]~~ a subscriber's network; and/or at least ~~[[an]]~~ one inter-network interface, which is used to couple with ~~[[said]]~~ the digital transmission network to transfer data frames; and

a data converting device, which is coupled with ~~[[said]]~~ the at least one subscriber network interface interfaces and ~~[[said]]~~ the at least one inter-network interface interfaces to convert ~~[[data]]~~ formats of the data frames between ~~[[said]]~~ the at least one subscriber network interface interfaces, ~~[[data]]~~ formats of the data frames between the at least one ~~[[said]]~~ inter-network interface interfaces, or ~~[[data]]~~ formats of the data frames between the at least one ~~[[said]]~~ inter-network interface interfaces and the at least one ~~[[said]]~~ subscriber network interface interfaces;

~~Wherein said~~ wherein the data converting device comprises: a virtual private device, an interface device and a processing device, ~~[[said]]~~ the virtual private device ~~exchanges~~ exchanging data frames between the at least one ~~[[said]]~~ subscriber network interface interfaces and the at least one ~~[[said]]~~ inter-network interface interfaces via ~~[[said]]~~ the interface device, and

~~[[said]]~~ the virtual private device comprises an inter-device interface, ~~[[which]]~~ couples coupled with ~~[[said]]~~ the processing device and ~~is used to~~ adapted for ~~[[input]]~~ inputting and

[[output]] outputting data frames; a virtual private processing unit, ~~which couples~~ coupled with [[said]] the inter-device interface and ~~is used to~~ adapted for detecting control messages and ~~converge~~ converging or ~~deconverge~~ diverging the data frames other than the control messages and ~~detect control messages~~; a rule database, ~~which couples~~ coupled with [[said]] the virtual private processing unit, ~~said rule database~~ and adapted for stores storing rules corresponding to ~~various the data frames, according to which the data frames are processed~~ couples with said virtual interface processing unit to process the data according to said rules; and a control interface unit, ~~which couples~~ coupled with [[said]] the rule database and [[said]] the virtual private processing unit and ~~is used to~~ adapted for controls controlling [[said]] the virtual private processing unit and [[said]] the rule database.

2. (Currently Amended) The system ~~A virtual private device in a digital transmission network~~ according to claim 1, wherein [[said]] the rules stored in the rule database stores comprise convergence rules rule and ~~deconvergence-rule~~ divergence rules.

3. (Currently Amended) The system ~~A virtual private device in a digital transmission network~~ according to claim 2, wherein the rules stored in the rule database further comprise said ~~rule database stores~~ relay rules.

4. (Currently Amended) The system ~~A virtual private device in a digital transmission network~~ according to ~~any of claim 1 to 3~~, wherein one data frame type corresponds to one rule, each of the [[rule]] rules stored in the rule database comprises the following rules: input data

frame type number, rule type (~~one of convergence, deconvergence and relay rules~~), label number, and output data frame type number.

5. (Currently Amended) ~~The system A virtual private device in a digital transmission network~~ according to claim 1, wherein the virtual private processing unit is further adapted for storing formats of the control messages, [[and]] the [[logic]] processing logic of [[said]] the data frames, are stored in said virtual private processing unit; and formats of rules [[are]] stored in [[said]] the rule database.

6. (Currently Amended) ~~The system A virtual private device in a digital transmission network~~ according to claim 1, wherein [[said]] the control interface unit is further adapted for provides providing an external control interface, through which to inspect the operation of the virtual private processing unit[[,]] is inspected, and add, delete, modify, and addition, deletion, modification, and search operation operations can be performed [[to]] on the rules in [[said]] the rule databases.

7. (Currently Amended) ~~The system A virtual private device in a digital transmission network~~ according to claim 1, wherein [[said]] the interface device is a virtual interface device, [[said]] and the processing device is a data processing and dispatching device, said inter device interface connects with said data processing and dispatching device or said virtual interface device.

8. (Currently Amended) A method of accessing and transmitting different data frames in a digital transmission network through ~~[[said]] the virtual private device~~ system of claim 1, comprising the following steps:

~~Data frames entering said virtual private device via an inter-device interface;~~

determining whether ~~[[the]]~~ data frames entering the virtual private device via the inter-device interface are control messages;

~~[[If]] if~~ yes, sending the data frames to an external control system via the control interface unit and ending ~~end~~ the process; ~~[[If]] if~~ not, extracting an input data type number ~~information~~ and ~~search~~ searching in the rule database according to ~~[[said]] the~~ input data type number;

~~Determining~~ determining whether the input data type number ~~information~~ is found;

~~[[If]] if~~ not, discarding ~~[[said]] the~~ data frames and ~~[[end]]~~ ending the process;

~~[[If]] if~~ yes, processing the data frames according to ~~[[the]]~~ a rule type;

~~Modifying~~ modifying the data frames, ~~[[and]]~~ sending ~~[[them]] the~~ data frames through the inter-device interface, and ending the process.

9. (Currently Amended) ~~[[A]] The~~ method according to claim 8, wherein the step of processing the data frames according to ~~[[the]]~~ a rule type comprises the following steps:

~~Determine~~ determining the rule type,

~~[[If]] if~~ it is a convergence rule, ~~insert~~ inserting ~~[[the]]~~ a label number defined in the rule in ~~[[the]]~~ a special position of the data frames;

~~[[If]] if~~ it is a ~~deconvergence~~ divergence rule, ~~remove~~ removing ~~[[the]]~~ a label number in ~~[[the]]~~ a special position of the data frames;

[[If]] if it is a relay rule, ~~change-changing~~ [[the]] a label number in [[the]] a special position of the data frames into a label number defined in the rule.

10. (Currently Amended) [[A]]The method according to claim 9, wherein the step of modifying the data frames comprises the step of replacing [[the]] a data frame type number in the head position of the data frames with [[the]] an output data frame type number defined in the rule.

11. (New) The system according to claim 4, wherein the rule type is one of convergence, divergence and relay rules.